

104 *108*
123. (New) The process of claim ~~121~~ wherein the aqueous solution is mixed into the curd for a period of time ranging from prior to heating the curd.

111 *104*
124. (New) The process of claim ~~117~~ wherein the cheese is formed into the selected shape by being extruded into packaging.

A13 *112* *104*
125. (New) The process of claim ~~117~~ wherein forming the cheese into the selected shape includes forming the cheese into an intermediate shaped extrudate by extrusion onto a chill roll or continuous belt.

113 *104*
126. (New) The process of claim ~~117~~ wherein the cheese produced by the process of claim 30 is characterized by a shelf life of up to six months.

REMARKS

This is responsive to the Office Action mailed on March 6, 2001. In that Office Action, the Examiner allowed claims 32-42 and 60-69, rejected claims 1-7, 11, 12, 21, 22, 25-28, 31, 43-59, 70-73 and 80 and objected to claims 8-10, 13-20, 23, 24, 29, 30 and 75-79. With this Amendment, claims 1, 9, 14, 43, 47, 50, 51, 57, 70 and 76-80 have been amended, and claims 2, 8, 13, 18, 20, 74 and 75 have been cancelled, and claims 81-126 have been added. The application now contains claims 1,3-7, 9-12, 14-17, 19, 21-73 and 76-126.

Applicant gratefully acknowledges the allowance of claims 32-42 and 60-69.

The Examiner rejected claims 2, 43 and 74 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner stated that "it is not seen that any and all GRAS substances would be useful in preparing the cheese product of the claims but only the specific GRAS ingredients set forth at page 7, lines 11-26. Claim 2 has been a cancelled and claims 43 and 70 (claim 74 and 75 being cancelled) have been amended to include the GRAS ingredients as defined in cancelled claim 75, that is either a cheese emulsifying salt, a non-dairy ingredient or

a dairy ingredient. In view of the above described amendment, it is now believed that claims 43 and claim 70 are in condition for allowance along with the dependent claims of claim 43 (claims 44-59) and the dependent claims of claim 70 (claims 71-73, 76-80). The Examiner should note that claims 47, 50 and 51 have been amended in view of the amendment to independent claim 43. Claim 49 has been amended to delete the word "is" and substitute therefore the word "contains" and the phrase "combination thereof" to increase the scope of claim 49. This amendment was not made in view of any prior art. Claim 57 was amended to depend from claim 43, having erroneously been dependent on claim 42. The dependency of dependent claims 76-79 has been changed to depend from claim 70 in view of the cancellation of claim 75. Claim 80's dependency was also changed to 70, having been erroneously dependent from claim 60.

Allowed claims 62 and 66 have also been amended, claim 61 having been amended to delete the phrase "is a" and insert therefore the word "contains", and to insert the phrase "combination thereof" to broaden claim 62. Claim 66 has been amended to insert the phrase "2 to 60 minutes" to better define the scope of the claim. This amendment was not made in view of any prior art.

The Examiner objected to claims 8-10, 13-20, 23, 24, 29, 30 and 75-79 but indicated that the claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Claim 1 has been amended to incorporate the elements of claims 8 and 13 in the alternative and claims 8 and 13 have been cancelled. Claim 10 has been amended to better define the scope of the claim by deleting the phrase "is a" and substituting the word "contains" and to state that alkaline earth salt could be a combination of any of the earth salts specified in the claim. The Amendment is not an amendment in response to any prior art. Claim 29 is being amended to change its dependency from claim 26 to claim 1. Again, to change independency is not being done in view of any prior art but is being done instead to broaden the scope of claim 29. Claim 30 is also amended to delete the phrase "pH of the" which modifies the word "curd", and to substitute therefore, the word "acidity" after the word "curd". The phrase "after whey is drained" is also being

deleted from claim 30 to broaden its scope. This change is also being done to better define the scope of the claim and is not being done in view of the prior art. In view of this Amendment, it is believed that claim 1 is now allowable along with its dependent claims 3-7, 9-12, 14, 17, 19 and 21-31.

Similarly, dependent claims 18, 19 and 20 have been rewritten in independent form as new claim 81. The patentable elements of dependent claims 18, 19 and 20 have been incorporated in new claim 81 in the alternative. The elements of dependent claims 82-91 correspond to the elements of dependent claims 3-7, 9, 10, 12, 21-29 and 31, respectively.

Dependent claim 30 has also been rewritten in independent form as claim 101 combining the elements of original claim 1 and claim 30. The elements of dependent claims 103-117 correspond to the elements of dependent claims 3-7, 21-29 and 31 respectively.

Lastly, new independent claim 117 has been added along with dependent claims 118-126. Claim 117 differs from allowed claim 60 in that the acidifying agent is added after pasteurization. Support for independent claim 117 can be found on page 6, lines 24-25. It is believed claim 117 and its dependent claims are allowable for the same reasons as claim 60 and its dependent claims were found allowable.

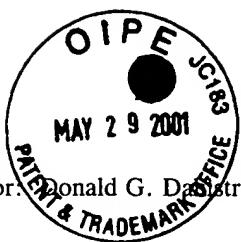
In view of the above, it is believed that the application is now in condition for allowance and reconsideration and allowance of all of the claims previously not allowed and the new claims added herein are respectfully requested.

Respectfully submitted,

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**APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS**

1. (Amended) A process of manufacturing a pasta filata cheese or a mozzarella-like cheese comprising:

providing a milk composition having a selected protein and fat composition;
pasteurizing the milk composition;
forming a coagulum from the milk composition;
cutting the coagulum to separate curd and whey;
draining the whey from the curd;
heating the curd without aqueous immersion to an approximate temperature range of 130°F to 160°F;

adding a cheese emulsifying salt or a dairy ingredient or both prior to mechanical working:

mechanically working the curd into a fibrous mass; and
forming the cheese into a selected shape.

9. (Amended) The process of claim [8] 1 wherein the salt composition includes an alkaline earth salt of simple or complex chlorides, sulfates, phosphates or citrates used in the manufacture of process cheese, cheese food, cheese spread, cheese sauce or imitation or analog cheeses.

10. (Amended) The process of claim 9 wherein the alkaline earth salt contains [is a] sodium, potassium, calcium, magnesium or combination thereof [salt].

14. (Amended) The process of claim [13] 1 wherein the dairy ingredient is either a milk, cream, yogurt, skim solids, or cheese that is dry, condensed, fluid, unripened, fermented or pH reduced or any combination thereof.

29. (Amended) The process of claim 1 [26] wherein the cheese is formed into shape by being extruded directly into packaging.

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30. (Amended) The process of claim 1 wherein [pH of the] curd acidity is adjusted [after whey is drained] to a pH range of approximately 5.0 to 5.4.

43. (Amended) A process of manufacturing a pasta filata cheese or a mozzarella-like cheese comprising:

- providing a milk composition having a selected protein and fat composition;
- pasteurizing the milk composition;
- forming a coagulum from the milk composition;
- cutting the coagulum to separate curd and whey;
- draining the whey from the curd;
- adding generally recognized as safe ingredients into the curd in amounts effective to obtain selected compositional or functional properties in a final cheese product, the generally recognized as safe ingredients including cheese emulsifying salt, a non-dairy ingredient, or dairy ingredient, or any combination thereof;
- heating the curd to a range of approximately 130 to 160°F;
- mechanically working the cheese curd into a fibrous mass; and
- forming the cheese into a selected shape.

47. (Amended) The process of claim 43 wherein the [generally recognized as safe ingredient includes a] cheese emulsifying salt [composition comprising of] comprises simple or complex chlorides or both, sulfates, phosphates or citrate cheese emulsifying salts or any combination thereof.

49. (Amended) The process of claim 48 wherein the alkaline earth salt contains [is] sodium, potassium, calcium, magnesium or combination thereof [salt].

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50. (Amended) The process of claim 43 wherein the [generally recognized as safe ingredients comprise] non-dairy ingredient[s that include] comprises either functional carbohydrates, lipase, protease, mineral acid, organic acid, structural protein, or anti-microbial agents, or any combination thereof.

51. (Amended) The process of claim 43 wherein the [generally recognized as safe ingredients comprise] dairy ingredients comprise [that include] either a milk, cream, yogurt, skim solids, or cheese that is dried, condensed, fluid, unripened, fermented or pH reduced or any combination thereof.

57. (Amended) The process of claim [42] 43 wherein the cheese is formed into shape by being extruded directly into packaging.

62. (Amended) The process of claim 61 wherein the alkaline earth salt contains [is] sodium, potassium, calcium, magnesium or combination thereof [salt].

66. (Amended) The process of claim 64 wherein the aqueous solution is mixed into the curd for a period of time ranging from 2 to 60 minutes prior to heating the curd.

70. (Amended) An improved process of manufacturing a pasta filata cheese or a mozzarella-like cheese, the improvement comprising:

after a coagulum is formed from a milk composition, and the coagulum cut to separate the curd and whey and the whey drained from the curd, heating the curd in an aqueous free environment to an approximate temperature range of 130°F to 160°F and adding either a cheese emulsifying salt, a non-dairy ingredient or a dairy ingredient or any combination thereof and mechanically working

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the curd in the aqueous free environment until a mozzarella-type texture is achieved.

76. (Amended) The process of claim [75] 70 wherein the emulsifying salt includes simple or complex chlorides, phosphates or citrates or a combination thereof.

77. (Amended) The process of claim [75] 70 wherein the non-dairy ingredient includes a functional carbohydrate, a lipase, a protease, a mineral acid, an organic acid, a structural protein or an antimicrobial agent or a combination thereof.

78. (Amended) The process of claim [75] 70 wherein the dairy ingredient is either a milk, cream, yogurt, skim solids, or cheese that is dry, condensed, fluid, unripened, fermented or pH reduced or any combination thereof.

79. (Amended) The process of claim [75] 70 wherein the emulsifying salt, the dairy ingredient or the non-dairy ingredient if in dry form is mixed in an aqueous solution containing about 5 to 50% by weight of the emulsifying salt, the dairy ingredient or the non-dairy ingredient.

80. (Amended) A product produced by the process of claim [60] 70 characterized by retention of mozzarella-like stringy texture even after two months from creation.

81. (New) A process of manufacturing a pasta filata cheese or a mozzarella-like cheese comprising:

providing a milk composition having a selected protein and fat composition;
pasteurizing the milk composition;
forming a coagulum from the milk composition;
cutting the coagulum to separate curd and whey;

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draining the whey from the curd;
heating the curd without aqueous immersion to an approximate temperature range of 130°F to 160°F;
adding a cheese emulsifying salt composition, a non-dairy ingredient, a dairy ingredient or any combination thereof via a starter culture medium;
mechanically working the curd into a fibrous mass; and
forming the cheese into a selected shape.

82. (New) The process of claim 81 wherein the curd is comminuted to a selected size.

83. (New) The process of claim 81 wherein the coagulum is heated after being cut to facilitate moisture removal from the curd.

84. (New) The process of claim 81 wherein the milk composition is fresh milk.

85. (New) The process of claim 81 wherein the milk composition is recombined milk.

86. (New) The process of claim 85 wherein the recombined milk is prepared from either protein concentrate, acid casein, rennet casein, caseinates, nonfat dry milk, whey, whey protein concentrate, whey protein isolate, cream, or condensed milk or any combination thereof.

87. (New) The process of claim 81 wherein the emulsifying salt composition includes an alkaline earth salt of simple or complex chlorides, sulfates, phosphates or citrates used in the manufacture of process cheese, cheese food, cheese spread, cheese sauce or imitation or analog cheeses.

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88. (New) The process of claim 87 wherein the alkaline earth salt is a sodium, potassium, calcium, magnesium or salt.

89. (New) The process of claim 81 wherein the non-dairy ingredient is a functional carbohydrate, a lipase, a protease, a mineral acid, an organic acid, a structural protein, or an antimicrobial agent or a combination thereof.

90. (New) The process of claim 81 wherein the dairy ingredient is either a milk, cream, yogurt, skim solids, or cheese that is dry, condensed, fluid, unripened, fermented or pH reduced or any combination thereof.

91. (New) The process of claim 81 wherein the cheese has a final moisture content in the range of about 20 to about 90 weight percent.

92. (New) The process of claim 91 wherein the cheese has a final moisture content in the range of about 30 to 60 weight percent.

93. (New) The process of claim 91 wherein the cheese final moisture content is adjustable by the addition of inert ingredients.

94. (New) The process of claim 93 wherein the inert ingredients are either structural carbohydrates or silicates or a combination thereof.

95. (New) The process of claim 81 wherein the mechanical working of the curd is done in a waterless cooker.

96. (New) The process of claim 81 and further including:

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cooling the cheese after the cheese is formed into the selected shape.

97. (New) The process of claim 96 and further packaging the cooled cheese.

98. (New) The process of claim 96 wherein the cheese is formed into either a circular, oval or rectangular cross-sectional shape between 0.25 inch to 15 inches in diameter or width or both in a horizontal or vertical plane.

99. (New) The process of claim 96 wherein the cheese is formed into shape by being extruded directly into packaging.

100. (New) A product produced by the process of claim 81 characterized by retention of mozzarella-like stringy texture even after two months from creation.

101. (New) A process of manufacturing a pasta filata cheese or a mozzarella-like cheese comprising:

providing a milk composition having a selected protein and fat composition;

pasteurizing the milk composition;

forming a coagulum from the milk composition;

cutting the coagulum to separate curd and whey;

draining the whey from the curd;

heating the curd without aqueous immersion to an approximate temperature range of 130°F to 160°F;

adjusting pH of the curd to a range of approximately 5.0 to 5.4 after the whey is drained;

mechanically working the curd into a fibrous mass; and

forming the cheese into a selected shape.

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102. (New) The process of claim 101 wherein the curd is comminuted to a selected size.

103. (New) The process of claim 101 wherein the coagulum is heated after being cut to facilitate moisture removal from the curd.

104. (New) The process of claim 101 wherein the milk composition is fresh milk.

105. (New) The process of claim 101 wherein the milk composition is recombined milk.

106. (New) The process of claim 105 wherein the recombined milk is prepared from either protein concentrate, acid casein, rennet casein, caseinates, nonfat dry milk, whey, whey protein concentrate, whey protein isolate, cream, or condensed milk or any combination thereof.

107. (New) The process of claim 101 wherein the cheese has a final moisture content in the range of about 20 to about 90 weight percent.

108. (New) The process of claim 107 wherein the cheese has a final moisture content in the range of about 30 to 60 weight percent.

109. (New) The process of claim 107 wherein the cheese final moisture content is adjustable by the addition of inert ingredients.

110. (New) The process of claim 109 wherein the inert ingredients are either structural carbohydrates or silicates or a combination thereof.

111. (New) The process of claim 101 wherein the mechanical working of the curd is done in a waterless cooker.

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112. (New) The process of claim 101 and further including:
cooling the cheese after the cheese is formed into the selected shape.

113. (New) The process of claim 112 and further packaging the cooled cheese.

114. (New) The process of claim 112 wherein the cheese is formed into either a circular, oval or rectangular cross-sectional shape between 0.25 inch to 15 inches in diameter or width or both in a horizontal or vertical plane.

115. (New) The process of claim 112 wherein the cheese is formed into shape by being extruded directly into packaging.

116. (New) A product produced by the process of claim 101 characterized by retention of mozzarella-like stringy texture even after two months from creation.

117. (New) A process of manufacturing a pasta filata cheese or a mozzarella-like cheese comprising:
providing a milk composition having a selected protein and fat composition;
pasteurizing the milk composition after acidification;
adding an acidifying agent to the milk composition after pasteurization;
cutting the coagulum to separate curd and whey;
draining the whey from the curd;
heating the curd to an approximate temperature range of 130°F to 160°F;
adding phosphate or citrate emulsifying salt or a combination therefore to the curd;
mechanically working the curd into a fibrous mass; and
forming the cheese into a selected shape.

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118. (New) The process of claim 117 wherein the emulsifying salt is an alkaline earth salt.

119. (New) The process of claim 118 wherein the alkaline earth salt is a sodium, potassium, calcium, magnesium or salt.

120. (New) The process of claim 117 wherein the salt is mixed into the curd in the form of aqueous solution containing about 5 to 50% of the salt, based on the weight of the solution.

121. (New) The process of claim 117 wherein the cheese has a moisture content in the range of 40 to 60% after being formed into the selected shape.

122. (New) The process of claim 117 wherein the temperature of the curd is in the approximate range of 20 to 160°F when adding the emulsifying salts.

123. (New) The process of claim 121 wherein the aqueous solution is mixed into the curd for a period of time ranging from prior to heating the curd.

124. (New) The process of claim 117 wherein the cheese is formed into the selected shape by being extruded into packaging.

125. (New) The process of claim 117 wherein forming the cheese into the selected shape includes forming the cheese into an intermediate shaped extrudate by extrusion onto a chill roll or continuous belt.

126. (New) The process of claim 117 wherein the cheese produced by the process of claim 30 is characterized by a shelf life of up to six months.